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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,577	07/29/2003	Augusto Rodriguez	005242.00059	4091

22907 7590 04/27/2006

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WASHINGTON, DC 20001

EXAMINER

CORDRAY, DENNIS R

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 04/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/628,577

Applicant(s)

RODRIGUEZ ET AL.

Examiner

Dennis Cordray

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 26-28 and 32-36 is/are pending in the application.
- 4a) Of the above claim(s) 26, 28, 33 and 36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 27, 32, 34 and 35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

Claims 26, 28, 33 and 36 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 7/12/2005.

Claims 27 and 34 will be examined with regard to the elected species of a hydrolyzed copolymer of styrene-maleic acid anhydride.

### *Claim Rejections - 35 USC § 103*

5. Claims 27, 32, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burdick in view of Gray et al.

Burdick discloses the application of an aqueous composition to the surface of a cellulosic web (col 14, lines 41-47). The solution comprises:

- a binder, which can be a starch (col 14, lines 1-6),
- an anionic polymer, which can be a styrene-maleic anhydride copolymer (col 5, lines 44-46 and 51-55) and
- a cationic polymer in aqueous solution, which can be a polyaminoamide-epichlorohydrin polymer (col 4, lines 63-66 and col 5, lines 1-8).

Burdick also discloses a sized cellulosic sheet treated with starch, anionic and cationic polymers (col 33, Example 9).

Burdick does not disclose the use of a styrene-maleic anhydride copolymer hydrolyzed using an ammonium salt.

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Gray et al teaches that hydrolyzing styrene-maleic anhydride copolymers for use as sizing agents is well known and applied on a commercial scale and that the largest market is for sodium or ammonium salts of the polymer (col 1, 13-17; col 3, lines 63-65). Gray et al also discloses that hydrolysis can be performed using ammonium hydroxide, which forms the ammonium salt (col 4, lines 4-7 and 15-20). The art of Burdick, Gray et al and the instant invention are analogous because they pertain to sizing solutions. It would have been obvious to a person of ordinary skill in the art to use a hydrolyzed styrene-maleic anhydride prepared by forming an ammonium salt in the process or Burdick in view of Gray et al as a well known and commercially available sizing agent.

### ***Response to Arguments***

Applicant's arguments filed 3/20/2006 have been fully considered but they are not persuasive.

Applicants argue that the two species originally presented, a) a hydrolyzed copolymer of styrene-maleic anhydride and b) a copolymer of styrene-acrylic ester dispersed in a copolymer of styrene-maleic acid, are not separate and distinct species and that listing them in the same claim was not intended to indicate that they were separate species. Applicants further argue that the currently amended Claim 35, which recites a composition containing hydrolyzed copolymer of styrene-maleic anhydride along with starch and a polyamidoamine-epichlorohydrin resin, leaves the composition open to the addition of a copolymer of styrene-acrylic ester, whether or not the copolymer of styrene-acrylic ester is dispersed in the anionic polymer.

In the original requirement for species election, the various species for anionic polymer were listed and included a hydrolyzed styrene-maleic anhydride copolymer and a copolymer of styrene-acrylic acid ester dispersed in a copolymer of styrene-maleic acid. Applicants elected without traverse in the reply filed on 7/12/2005 the anionic species "a styrene-maleic anhydride (SMA) copolymer," thus excluding "a copolymer of styrene-acrylic acid ester dispersed in a copolymer of styrene-maleic acid."

In regard to the argument on p 3, 2nd par that a copolymer of styrene-maleic acid anhydride having a copolymer of styrene-acrylic acid ester dispersed therein is a subspecies of the elected species of a hydrolyzed styrene-maleic anhydride copolymer, the latter is a specific copolymer and the former is a specific mixture of two separate and distinct copolymers and neither can be considered generic to the other. A hydrolyzed styrene-maleic anhydride copolymer is a single copolymer and not a mixture of copolymers. A copolymer of styrene-maleic acid anhydride having a copolymer of styrene-acrylic acid ester dispersed therein is a mixture of two copolymers and cannot include one without the other. The copolymer and the mixture of copolymers are both species of the same genus, a composition comprising a hydrolyzed styrene-maleic anhydride copolymer but are not genus and species with respect to each other.

Original Claim 6 recited both a "hydrolyzed copolymer of styrene-maleic anhydride," and a "copolymer of styrene-acrylic acid ester dispersed in a copolymer of styrene-maleic acid" as separate and distinct species. Page 6, par 21 of the Disclosure recites "One specific anionic polymeric agent is a solublized styrene-maleic acid (also referred to as "SMA") copolymer" and later recites "a hybrid anionic component such as

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an ammonium SMA solution and a styrene-acrylate copolymer (SAE) dispersion ... can also be used as the anionic polymer." Clearly Applicants have treated the copolymer and the dispersion of copolymers as separate and distinct species and have elected the copolymer of styrene-maleic acid for prosecution.

Applicants argue that the Burdick reference does not disclose hydrolyzed SMA. Gray et al teaches that styrene-maleic anhydride copolymers for use as sizing agents are most often provided as sodium or ammonium salts of the polymer (largest market), thus the obviousness of using the ammonium salt in the composition of Burdick.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
DRC

  
STEVEN P. GRIFFIN  
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